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| 7 Acres, Bruce 8 Thomas, Mireille 10 <120> TITLE OF INVENTION: MUC-1 derived peptides 12 <130> FILE REFERENCE: 029395-017 14 <140> CURRENT APPLICATION NUMBER: US 09/658,621B 15 <141> CURRENT FILING DATE: 2000-09-08 17 <150> PRIOR APPLICATION NUMBER: US 60/187,215 18 <151> PRIOR FILING DATE: 2000-03-03 20 <150> PRIOR APPLICATION NUMBER: GB 9921242.5 21 <151> PRIOR FILING DATE: 1999-09-08 23 <150> PRIOR APPLICATION NUMBER: EP 99 40 2237.4 24 <151> PRIOR FILING DATE: 1999-09-10 26 <160> NUMBER OF SEQ ID NOS: 80 28 <170> SOFTWARE: PatentIn version 3.1 30 <210> SEQ ID NO: 1 31 <211> LENGTH: 1572 32 <212> TYPE: DNA 33 <213> ORGANISM: Homo sapiens 35 <220> FEATURE: 36 <221> NAME/KEY: CDS 37 <222> LOCATION: (58)(1542) 39 <440> SEQUENCE: 1 40 gaattecetg getgettgaa tetgttetge eccetecea eccatteae caccaec 57 42 atg aca ceg ggc acc cag tet ect tet etc etg etg etg etc etc aca 105 43 Met Thr Pro Gly Thr Gln Ser Pro Phe Phe Leu Leu Leu Thr 41 | 5 | | | | | | | | | | | | | | | | |
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| 42 atg aca ccg ggc acc cag tct cct ttc ttc ctg ctg ctg ctc ctc aca 43 Met Thr Pro Gly Thr Gln Ser Pro Phe Phe Leu Leu Leu Leu Leu Thr 44 1 | | | | | • | | | • | | | | | | | | | |
| 42 atg aca ccg ggc acc cag tct cct ttc ttc ctg ctg ctg ctc ctc aca 43 Met Thr Pro Gly Thr Gln Ser Pro Phe Phe Leu Leu Leu Leu Leu Thr 44 1 | 40 | gaatte | cectg | gctg | cttg | aa to | ctgti | tatg | c cc | cate | ccca | ccca | attt | cac o | cacca | acc | 57 |
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| 44 1 5 10 15 46 gtg ctt aca gtt gtt aca ggt tct ggt cat gca agc tct acc cca ggt 153 47 Val Leu Thr Val Val Thr Gly Ser Gly His Ala Ser Ser Thr Pro Gly 48 20 25 30 50 gga gaa aag gag act tcg gct acc cag aga agt tca gtg ccc agc tct 51 Gly Glu Lys Glu Thr Ser Ala Thr Gln Arg Ser Ser Val Pro Ser Ser 52 35 40 45 54 act gag aag aat gct gtg agt atg acc agc agc gta ctc tcc agc cac 55 Thr Glu Lys Asn Ala Val Ser Met Thr Ser Ser Val Leu Ser Ser His | | | _ | | | _ | | | | | - | _ | - | | | | |
| 47 Val Leu Thr Val Val Thr Gly Ser Gly His Ala Ser Ser Thr Pro Gly 48 20 25 30 50 gga gaa aag gag act tcg gct acc cag aga agt tca gtg ccc agc tct 51 Gly Glu Lys Glu Thr Ser Ala Thr Gln Arg Ser Ser Val Pro Ser Ser 52 35 40 45 54 act gag aag aat gct gtg agt atg acc agc agc gta ctc tcc agc cac 55 Thr Glu Lys Asn Ala Val Ser Met Thr Ser Ser Val Leu Ser Ser His | | | | - | | | | | | | | | | | | | |
| 47 Val Leu Thr Val Val Thr Gly Ser Gly His Ala Ser Ser Thr Pro Gly 48 20 25 30 50 gga gaa aag gag act tcg gct acc cag aga agt tca gtg ccc agc tct 51 Gly Glu Lys Glu Thr Ser Ala Thr Gln Arg Ser Ser Val Pro Ser Ser 52 35 40 45 54 act gag aag aat gct gtg agt atg acc agc agc gta ctc tcc agc cac 55 Thr Glu Lys Asn Ala Val Ser Met Thr Ser Ser Val Leu Ser Ser His | 46 | gtg ct | t aca | gtt | gtt | aca | ggt | tct | ggt | cat | qca | agc | tct | acc | cca | ggt | 153 |
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| 51 Gly Glu Lys Glu Thr Ser Ala Thr Gln Arg Ser Ser Val Pro Ser Ser 52 35 40 45 54 act gag aag aat get gtg agt atg acc agc agc gta etc tec agc cae 249 55 Thr Glu Lys Asn Ala Val Ser Met Thr Ser Ser Val Leu Ser Ser His | | | | | | | • | | | | | | | | | - | |
| 51 Gly Glu Lys Glu Thr Ser Ala Thr Gln Arg Ser Ser Val Pro Ser Ser 52 35 40 45 54 act gag aag aat get gtg agt atg acc agc agc gta etc tec agc cae 249 55 Thr Glu Lys Asn Ala Val Ser Met Thr Ser Ser Val Leu Ser Ser His | 50 | qqa qa | a aag | qaq | act | tcq | gct | acc | caq | aga | aqt | tca | qtq | ccc | age | tct | 201 |
| 52 35 40 45 54 act gag aag aat get gtg agt atg ace age gta ete tee age eac 249 55 Thr Glu Lys Asn Ala Val Ser Met Thr Ser Ser Val Leu Ser Ser His | | | | | | | | | | | | | | | | | |
| 55 Thr Glu Lys Asn Ala Val Ser Met Thr Ser Ser Val Leu Ser Ser His | | - | _ | | | | | | | , | | | | | | | |
| 55 Thr Glu Lys Asn Ala Val Ser Met Thr Ser Ser Val Leu Ser Ser His | 54 | act qa | g aag | aat | act | ata | agt | atq | acc | agc | agc | qta | | tcc | agc | cac | 249 |
| | | | | | | | | | | | | | | | | | |
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| 58 ago coo ggt toa ggo too too aco act cag gga cag gat gto act ctg 297 | | age co | c ggt | tca | ggc | tcc | | acc | act | caσ | qqa | caσ | gat | atc | act | cta | 297 |
| 59 Ser Pro Gly Ser Gly Ser Ser Thr Thr Gln Gly Gln Asp Val Thr Leu | | | | | | | | | | | | | | | | | · |
| 60 65 70 75 80 | | | _ | | - 1 | | | -: - | | · | | | L | | | | |
| 62 gcc ccg gcc acg gaa cca gct tca ggt tca gct gcc acc tgg gga cag 345 | | | g gcc | acq | qaa | | gct | tca | gat | tca | | qcc | acc | taa | qqa | | 345 |

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Output Set: N:\CRF4\04302003\I658621B.raw

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| 67 Asp Val Thr Ser Val Pro Val Thr Arg Pro Ala Leu Gly Ser Thr Thr 68 | 41 189 |
| 67 Asp Val Thr Ser Val Pro Val Thr Arg Pro Ala Leu Gly Ser Thr Thr 68 | 89 |
| 68 | 89 |
| 71 Pro Pro Ala His Asp Val Thr Ser Ala Pro Asp Asn Lys Pro Ala Pro 72 115 120 125 74 ggc tcc acc gcc ccc ccg gcc cac ggt gtc acc tcg gcc ccg gac acc 75 Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr 76 130 135 140 78 agg ccg ccc ccg ggc tcc acc gcc ccc gcc gcc cac ggt gtc acc tcg 79 Arg Pro Pro Gly Ser Thr Ala Pro Ala Ala His Gly Val Thr Ser | 89 |
| 71 Pro Pro Ala His Asp Val Thr Ser Ala Pro Asp Asn Lys Pro Ala Pro 72 115 120 125 74 ggc tcc acc gcc ccc ccg gcc cac ggt gtc acc tcg gcc ccg gac acc 75 Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr 76 130 135 140 78 agg ccg ccc ccg ggc tcc acc gcc ccc gcc gcc cac ggt gtc acc tcg 79 Arg Pro Pro Gly Ser Thr Ala Pro Ala Ala His Gly Val Thr Ser | |
| 72 115 120 125 74 ggc tcc acc gcc ccc ccg gcc cac ggt gtc acc tcg gcc ccg gac acc 4 75 Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr 76 130 135 140 78 agg ccg ccc ccg ggc tcc acc gcc ccc gcc gcc cac ggt gtc acc tcg 79 Arg Pro Pro Pro Gly Ser Thr Ala Pro Ala Ala His Gly Val Thr Ser | |
| 75 Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr 76 130 135 140 78 agg ccg ccc ccg ggc tcc acc gcc ccc gcc gcc cac ggt gtc acc tcg 79 Arg Pro Pro Pro Gly Ser Thr Ala Pro Ala Ala His Gly Val Thr Ser | |
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| 79 Arg Pro Pro Pro Gly Ser Thr Ala Pro Ala Ala His Gly Val Thr Ser | 37 |
| 455 | |
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| 82 ged deg gad acc agg deg ged deg ggd ted acc ged ded deg ged dad 5 | 85 |
| 83 Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His | |
| 84 165 170 175 | |
| | 33 |
| 87 Gly Val Thr Ser Ala Pro Asp Asn Arg Pro Ala Leu Gly Ser Thr Ala | |
| 88 180 185 190 | |
| | 81 |
| 91 Pro Pro Val His Asn Val Thr Ser Ala Ser Gly Ser Ala Ser Gly Ser | |
| 92 195 200 205 | |
| | 729 |
| 95 Ala Ser Thr Leu Val His Asn Gly Thr Ser Ala Arg Ala Thr Thr | |
| 96 210 215 220 | |
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| 99 Pro Ala Ser Lys Ser Thr Pro Pro Ser Ile Pro Ser His His Ser Asp | 777 |
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| 100 225 230 235 240 102 act cct acc acc ctt gcc agc cat agc acc aag act gat gcc agt agc 103 Thr Pro Thr Thr Leu Ala Ser His Ser Thr Lys Thr Asp Ala Ser Ser 104 245 250 255 | |
| 100 225 230 235 240 102 act cct acc acc ctt gcc agc cat agc acc aag act gat gcc agt agc 103 Thr Pro Thr Thr Leu Ala Ser His Ser Thr Lys Thr Asp Ala Ser Ser 104 245 250 255 106 act cac cat agc acg gta cct cct ctc acc tcc tcc aat cac agc act | 825 |
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Output Set: N:\CRF4\04302003\I658621B.raw

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| 131 | Asn | Val | His | Asp | Val | Glu | Thr | Gln | Phe | Asn | Gln | Tyr | Lys | Thr | Glu | Ala | |
| 132 | | | 355 | | | | | 360 | | | | | 365 | | | | |
| | | | | | | | | | | | | agc | | | | | 1209 |
| 135 | Ala | Ser | Arg | Tyr | Asn | Leu | Thr | Ile | Ser | Asp | Val | Ser | Val | Ser | His | Val | |
| 136 | | 370 | | | | | 375 | | | | | 380 | | | | | |
| | | | | | | | | | | | | gtg | | | | | 1257 |
| 139 | Pro | Phe | Pro | Phe | Ser | Ala | Gln | Ser | Gly | Ala | Gly | Val | Pro | Gly | Trp | Gly | |
| - | 385 | | | | | 390 | | | | | 395 | | | | | 400 | |
| 142 | atc | gcg | ctg | ctg | gtg | ctg | gtc | tgt | gtt | ctg | gtt | gcg | ctg | gcc | att | gtc | 1305 |
| 143 | Ile | Ala | Leu | Leu | Val | Leu | Val | Cys | Val | Leu | Val | Ala | Leu | Ala | Ile | Val | |
| 144 | | | | | 405 | | | | | 410 | | | | | 415 | | |
| 146 | tat | ctc | att | gcc | ttg | gct | gtc | tgt | cag | tgc | cgc | cga | aag | aac | tac | ggg | 1353 |
| 147 | Tyr | Leu | Ile | Ala | Leu | Ala | Val | Cys | Gln | Cys | Arg | Arg | Lys | Asn | Tyr | Gly | |
| 148 | | | | 420 | | | | | 425 | | | | | 430 | | | |
| 150 | cag | ctg | gac | atc | ttt | cca | gcc | cgg | gat | acc | tac | cat | cct | atg | agc | gag | 1401 |
| 151 | Gln | Leu | Asp | Ile | Phe | Pro | Ala | Arg | Asp | Thr | Tyr | His | Pro | Met | Ser | Glu | |
| 152 | | | 435 | | | | | 440 | | | | | 445 | | | | |
| 154 | tac | ccc | acc | tac | cac | acc | cat | ggg | cgc | tat | gtg | ccc | cct | agc | agt | acc | 1449 |
| 155 | Tyr | Pro | Thr | Tyr | His | Thr | His | Gly | Arg | Tyr | Val | Pro | Pro | Ser | Ser | Thr | |
| 156 | | 450 | | | | | 455 | | | | | 460 | | | | | |
| | _ | _ | - | | | | _ | _ | | _ | | aat | | | _ | _ | 1497 |
| | _ | Arg | Ser | Pro | Tyr | | Lys | Val | Ser | Ala | Gly | Asn | Gly | Gly | Ser | | |
| | 465 | | | | | 470 | | | | | 475 | | | | | 480 | |
| | | | | | | | _ | | _ | _ | | tct | | | | | 1542 |
| | Leu | Ser | Tyr | Thr | | Pro | Ala | Val | Ala | | Thr | Ser | Ala | Asn | | | |
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| 177 | | _ | _, | | 5 | m1 | a 1 | | a 3 . | 10 | | | a | m1 | 15 | 01 | |
| | vaı | Leu | Thr | | vaı | Thr | GIY | ser | _ | HlS | Ата | Ser | ser | | Pro | GIY | |
| 181 | a 1 . | a 1. | • | 20 | m1 | 0 | 33- | m) | 25 | | a | a | 77-1 | 30 | a | 0 | |
| | GTA | GIU | _ | GIU | Thr | ser | Ата | | GIn | Arg | ser | Ser | | Pro | ser | ser | |
| 185 | m 1 | a 1 | 35 | | 21- | 17.a 1 | | 40 | mh | O | G | 170] | 45 | G o w | C | TT | |
| | Thr | | | | | | | | | | | Val | Leu | Ser | ser | HIS | |
| 189 | a | | | | | 0 | - | m1 | | | | | 3 | *7 n T | m h sa | T | |
| | | PLO | стА | ser | сτλ | | ser | 111I. | 1111. | GTII | 75 | Gln | ASP | vdl | 1111, | 80 | |
| 193 | | Dro | 23~ | mh~ | C1 | 70 Dro | 717 | C~~ | C1++ | C~~ | | ת 1 ת | mh.∽ | m~~ | C1 | | |
| 196 | ATG | PLO | Ald | THE | 85 | PLO | HIG | ser. | GTÅ | ser 90 | HIG | Ala | TIIT. | ттþ | 95 | GTII | |
| | λ~ | W = 1 | πh∽ | G0~ | | Dro | W= 1 | Thr | λνα | | λΊο | Leu | G1 v | Sor | | ሞh.∽ | |
| 201 | иsh | AdT | TITT | 100 | Val | P10 | νат | TIIT | 105 | FIO | HIG | ъец | ату | 110 | TIIT | 1 11T | |
| | Dro | Dro | λla | | λen | Va 1 | Thr | Sar | | Dro | λen | Asn | T.37.0 | | בומ | Dro | |
| 204 | PIO | FIO | чта | HTS | uph | Val | TIIT | SET | нта | FIO | ush | uon | пÃЭ | FIO | нта | FILO | |

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/658,621B

DATE: 04/30/2003
TIME: 13:04:21

Input Set : A:\02-11-14 029395-017.ST25.txt
Output Set: N:\CRF4\04302003\I658621B.raw

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| 208 | Gly | | Thr | Ala | Pro | Pro | | His | Gly | Val | Thr | | Ala | Pro | Asp | Thr |
| 209 | | 130 | | | | | 135 | | | | | 140 | | _ | | |
| | Arg | Pro | Pro | Pro | Gly | Ser | Thr | Ala | Pro | Ala | | His | Gly | Val | Thr | |
| | 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| 216 | Ala | Pro | Asp | Thr | Arg | Pro | Ala | Pro | Gly | Ser | Thr | Ala | Pro | Pro | | His |
| 217 | | | | | 165 | | | | | 170 | | | | | 175 | |
| 220 | Gly | Val | Thr | Ser | Ala | Pro | Asp | Asn | Arg | Pro | Ala | Leu | Gly | Ser | Thr | Ala |
| 221 | | | | 180 | | | | | 185 | | | | | 190 | | |
| 224 | Pro | Pro | Val | His. | Asn | Val | Thr | Ser | Ala | Ser | Gly | Ser | Ala | Ser | Gly | Ser |
| 225 | | | 195 | | | | | 200 | | | | | 205 | | | |
| 228 | Ala | Ser | Thr | Leu | Val | His | Asn | Gly | Thr | Ser | Ala | Arg | Ala | Thr | Thr | Thr |
| 229 | | 210 | | | | | 215 | | | | | 220 | | | | |
| 232 | Pro | Ala | Ser | Lys | Ser | Thr | Pro | Pro | Ser | Ile | Pro | Ser | His | His | Ser | Asp |
| | 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| 236 | Thr | Pro | Thr | Thr | Leu | Ala | Ser | His | Ser | Thr | Lys | Thr | Asp | Ala | Ser | Ser |
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| 240 | Thr | His | His | Ser | Thr | Val | Pro | Pro | Leu | Thr | Ser | Ser | Asn | His | Ser | Thr |
| 241 | | | | 260 | | | | | 265 | | | | | 270 | | |
| 244 | ser | Pro | Gln | Leu | Ser | Thr | Gly | Val | Ser | Phe | Phe | Phe | Leu | Ser | Phe | His |
| 245 | | | 275 | | | | _ | 280 | | | | | 285 | | | |
| 248 | Ile | Ser | Asn | Leu | Gln | Phe | Asn | Ser | Ser | Leu | Glu | Asp | Pro | Ser | Thr | Asp |
| 249 | | 290 | | | | | 295 | | | | | 300 | | | | |
| 252 | Tyr | Tyr | Gln | Glu | Leu | Gln | Arq | Asp | Ile | Ser | Glu | Met | Phe | Leu | Gln | Ile |
| | 305 | - | | | | 310 | | - | | | 315 | | | | | 320 |
| 256 | Tyr | Lys | Gln | Gly | Gly | Phe | Leu | Gly | Leu | Ser | Asn | Ile | Lys | Phe | Arg | Pro |
| 257 | | | | • | 325 | | | • | | 330 | | | - | | 335 | |
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| | Asn | Va1 | His | | Val | Glu | Thr | Gln | Phe | Asn | Gln | Tyr | Lys | Thr | Glu | Ala |
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| | Ala | Ser | | Tvr | Asn | Leu | Thr | | Ser | Asp | Val | Ser | Val | Ser | His | Val |
| 269 | | 370 | 5 | -1- | | | 375 | | | | | 380 | | | | |
| | Pro | | Pro | Phe | Ser | Ala | | Ser | Glv | Ala | Gly | Val | Pro | Gly | Trp | Gly |
| | 385 | | | | | 390 | | | | | 395 | | | - | • | 400 |
| | Ile | Ala | Leu | Leu | Val | | Val | Cvs | Val | Leu | | Ala | Leu | Ala | Ile | Val |
| 277 | | | 200 | 200 | 405 | | | -1- | | 410 | | | | | 415 | |
| | Tyr | Len | Tle | Ala | | Ala | Va1 | Cvs | Gln | | Ara | Ara | Lvs | Asn | | Glv |
| 281 | | Lou | | 420 | 200 | | | -1- | 425 | -1- | 5 | 5 | -1- | 430 | - 1 - | 1 |
| | Gln | Leu | Asp | | Phe | Pro | Ala | Ara | | Thr | Tvr | His | Pro | Met. | Ser | Glu |
| 285 | 0111 | LCu | 435 | 110 | | 0 | | 440 | | | -1- | | 445 | | | |
| | Tyr | Pro | | Tvr | Иiс | Thr | His | | Ara | Ψvr | Va l | Pro | | Ser | Ser | Thr |
| | -1- | | 1 | -1- | ***** | | 455 | 011 | 5 | -1- | | 460 | | | | |
| | Asp | | Ser | Pro | Tur | Glu | | ٧al | Ser | Αla | Glv | | Glv | Glv | Ser | Ser |
| | 465 | .11.9 | JUL | | -1- | 470 | ~1 ~ | , | | | 475 | | 1 | 1 | | 480 |
| | Leu | Ser | ጥτ∞ | Thr | Δen | | Δla | Va1 | Д1а | Д1а | | Ser | Ala | Asn | Len | 100 |
| 297 | n-cu | PET | - J - | T 11T | 485 | £ 1 U | TITE | , u 1 | | 490 | T 11T | 501 | | | 495 | |
| | <210 | וא פי | יד חי | רא ר | | | | | | 300 | | | | | 200 | |
| | <213 | | | | . , | | | | | | | | | | | |
| 20T | ~21. | r / 11 | 714 G T. I | ı. y | | | | | | | | | | | | |

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/658,621B

DATE: 04/30/2003
TIME: 13:04:21

Input Set: A:\02-11-14 029395-017.ST25.txt
Output Set: N:\CRF4\04302003\I658621B.raw

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303 <213> ORGANISM: Homo sapiens
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324 <212> TYPE: PRT
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329 Thr Leu Ala Pro Ala Thr Glu Pro Ala
330 1
333 <210> SEQ ID NO: 6
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335 <212> TYPE: PRT
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341 1
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345 <211> LENGTH: 9
346 <212> TYPE: PRT
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351 Ser Val Pro Val Thr Arg Pro Ala Leu
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356 <211> LENGTH: 9
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362 Gly Val Pro Gly Trp Gly Ile Ala Leu
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367 <211> LENGTH: 9
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VERIFICATION SUMMARYDATE: 04/30/2003PATENT APPLICATION:US/09/658,621BTIME: 13:04:23

Input Set: A:\02-11-14 029395-017.ST25.txt
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